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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/594,269

07/24/2007

Carlo Zanotta

05999.0292

1854

22852

7590

01/14/2009

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EXAMINER

MASHRUWALA, NIKHIL P

ART UNIT

PAPER NUMBER

3749

MAIL DATE

DELIVERY MODE

01/14/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/594,269	<b>Applicant(s)</b> ZANOTTA, CARLO	
	<b>Examiner</b> NIKHIL MASHRUWALA	<b>Art Unit</b> 3749	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 30-54 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 30-54 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 September 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. ____.                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>9/26/2006, 7/24/2007 and 4/4/2008</u> .                       | 6) <input type="checkbox"/> Other: ____.                          |



## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. Claims 30-54 are rejected under 35 U.S.C. 103(a) as being unpatentable over EP 953628 of Zucchelli et al (US equivalent patent 6,375,691) in view of US patent 4,314,887 of Haley et al.

For claims 30 and 54, Zucchelli discloses a process and a plant for producing a refuse derived solid fuel and feeding said fuel to a combustion plant (see the abstract and figs 7-9), which comprises: providing a first component USW consisting of a dry fraction of solid urban waste USW in a shredded form (see page 3, line 25-32); providing at least one second component in a shredded form selected from an elastomeric material and a thermoplastic material, or mixtures thereof. Zucchelli does not disclose separately feeding said first component USW and said at least one second

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component onto a continuous conveyor in such a way so as to form overlapping layers of said components. Haley discloses separately metering and feeding ( feeder 24, 26) two different components on the conveyor 4 per fig 1-3 to form overlapping layers 20-22. It would be obvious for a person of ordinary skill in the art at the time invention was made to provide such metering and feeding device on a conveyor to Zucchelli in view of Haley so as to get overlapping layers ( instead of mixing homogenously) and retain its properties in the combined mixed layer at the end. It would have been obvious to collect such product mix from the conveyor 4 of Haley in a temporary accumulation container like silo 46 of Zucchelli so as to feed such fuel mixture into the combustion plant per fig 8-9 via a moving base 47 consisting a conveyor belt which discharges a preselectable amount of NFSF over time ( metering) into the twin Archimedean screw line 48 (see col 7, lines 28-55 per figs 8-9 of US equivalent patent 6,375,691 of Zucchelli et al). All the metering of waste material of Zucchelli is being done in weight ratio ( metering) which is determined as a function of the desired calorific power ( see page 3, line 33)

For claim 31, Zucchelli discloses thermoplastic waste component three consisting of polymer like PE, LDPE, PET etc and it would be merely selection of material per MPEP 2144.04 to get waste plastic material shredding of chlorine-free (having no vinyl polymers or PVC).

For claim 32, 34, 38 Zucchelli discloses at 90% least by weight of polymer particles are smaller than 7.5 mm ( see page 3, para 0021).

For claim 33, Zucchelli discloses elastomeric waste material made out of used tyres which are grounded and stripped/shredded of any ferrous material ( see page 3,

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lines 30-33).

For claims 35-37, the USW of Zucchelli is obtained by mechanical separation, shedding and drying process (see page 3, para 0019a-b) and having particle size of less than 7.5 mm.

For claims 39-40, dry fraction of USW has moisture content less than 10% ( see page 3, para 0019d).

For claim 41, the RDSF per fig 8-9 of Zucchelli uses silo 46 for feeding into the combustion plant which was stored first in silo 40 passes to blade mill 41 for grounding. Such silos are compact and transportable per well know art of material storage.

For claims 42-43, solid-fuel of Zucchelli discloses density of 0.5 g/cm<sup>3</sup> per its claim 5 and it would be merely a choice in design and selection of waste material to have bulk density between 0.60 to .90.

For claims 44-45, combination of Zucchelli and Haley discloses a metering screw 48 and feeding to a continuous conveyor per weight ratio as discussed in claim 1 along with preselectable amount ( weight) of NFSF and it would be obvious to consider the same art for metering and feeding first and second waste components.

For claims 46-47, as discussed in claim 1, it would be merely a choice in design for the overlapping material layers disclosed by Haley per bulk density to increase from bottom to the top so as to get thermoplastic in lower layer, USW in intermediate layer and elastomeric material in the upper most layer.

For claims 48-49, it would be merely a choice in design by weight for RDSF fuel of Haley to get material composition like 40-90% ( or 60-80%) of dry fraction of RDSF

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and 10-60% of at least one thermoplastic polymer material ( or 20-40% of thermoplastic polymer material) selected from elastomeric material and thermoplastic material or mixtures thereof.

For claims 50-51, it would be merely a choice in design by weight to obtain RDSF fuel of Haley to get material composition like 40-90% ( 60-80%) of dry fraction of RDSF fuel and 5-55% ( or 10-30%) of elastomeric polymer material and 5-55% ( or 10-30%) of thermoplastic polymer material.

For claims 52-53, Zucchelli discloses a bulk density of 0.3 to 0.5 g/cm<sup>3</sup> of RDSF per page 3, para 0016 and it would be merely a choice in design to obtain density of 0.60g.cm<sup>3</sup> or 0.35 to .12 g/cm<sup>3</sup> for optimization of the process.

### ***Conclusion***

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The prior art of Zucchelli and Haley discloses the current state of the art a process and plant for producing a refuse derived solid fuel.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to NIKHIL MASHRUWALA whose telephone number is (571)270-3519. The examiner can normally be reached on Monday thru Friday- 7:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven McAllister can be reached on 571-272-6785. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Nikhil Mashruwala/  
Examiner, Art Unit 3749

/Steven B. McAllister/  
Supervisory Patent Examiner, Art Unit 3749